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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/816,697	04/05/2004	Richard Scott Bourgeois	126533-1	9731

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GENERAL ELECTRIC COMPANY
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NISKAYUNA, NY 12309

EXAMINER

CHUO, TONY SHENG HSIANG

ART UNIT PAPER NUMBER

1745

DATE MAILED: 08/30/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/816,697

Applicant(s)

BOURGEOIS ET AL.

Examiner

Tony Chuo

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 April 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) 1-18 and 27-29 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 19-26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 April 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>4/5/04</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Applicant's election with traverse of Group II, Claims 19-26 in the reply filed on 8/14/06 is acknowledged. Claims 1-18 and 27-29 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected Group I, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on 8/14/06. The species election requirement is withdrawn.

Information Disclosure Statement

2. The information disclosure statement (IDS) submitted on 4/5/04 was filed on 4/5/04. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Drawings

3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: on page 13, hollow manifold "16" and top wall "18" are not shown on Figure 7. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either

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"Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

4. The disclosure is objected to because of the following informalities: on page 13, fuel cell stack "54" should be changed to fuel cell stack "60" and cathode interconnect "34" should be changed to cathode interconnect "32". Appropriate correction is required.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claim 19 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. It is unclear how a single wall defines a chamber.

7. Claim 26 recites the limitation "said top wall" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102/103

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102/103 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 19-23 and 25-26 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Isobe et al (US 4942099). Regarding claims 19 and 23, the Isobe reference teaches a molten carbonate fuel cell stack comprising a plurality of unit cells "1" that are electrically coupled together such that at least one sealed passage "7" extends between the unit cells wherein each unit cell comprises an oxidant gas intake manifold "20" comprising a wall "51" extending between a first end and a second end defining a chamber "41" therein where the wall comprises at least one opening extending therethrough in flow communication with chamber "41". In addition, it also teaches each unit comprising an anode "2", a cathode "3", and an electrolyte "4" that are disposed on the wall (See column 2, lines 11-14, column 3, lines 27-50, column 5, lines 30-35, and Figure 5). In addition, it also teaches metal members "52" & "53" that are part of the wall "51" immediately adjacent to the fuel cell and sealed passage that have coefficients of expansion that are smaller than that of the separator (See column 6, lines 64-68). Therefore, it is implicit from the teachings of Isobe et al, that the metal members "52" & "53" have stiffness properties that are inherent such that the metal members have an inherent property of lower stiffness compared to the fuel cell and sealed passage to accommodate a strain between the fuel cell, wall, and sealed passage.

Regarding claim 20, it also teaches a cathode flow channel "7" coupled to at least one manifold "20" of the unit cell that is configured for directing an oxidant between the first and second unit cells (See Figure 5).

Regarding claim 21, it also teaches a hollow manifold "20" for the unit cells "1" that is substantially rectangular (See Figure 5).

Regarding claim 22, it also teaches a hollow manifold "20" defined by metal members "52" that comprises an electrically conductive material (See column 5, lines 10-15).

Regarding claim 25, it also teaches a thermal expansion difference between the separator and insulating member that can be absorbed by the yield of metal members (See column 5, lines 35-40).

Regarding claim 26, it is implicit from the teachings of Isobe et al that the porous cathode and anode have different thermal coefficients of expansion than the top wall that is a metal plate (See column 3, line 29 and column 5, line 12).

Examiner's note: This rejection is based on inherent characteristics (In re Best, 562 F.2d 1252, 1255 n.4, 195 USPQ 430, 433 n.4 (CCPA 1977)).

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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11. Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Isobe et al (US 4942099) in view of Schora et al (US 5077148). The Isobe reference is applied to claim 19 for reasons stated above. However, the reference does not expressly teach a fuel cell comprising a solid oxide fuel cell. The Schora reference does teach a solid oxide fuel cell (See column 5, lines 1-3). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the Isobe fuel cell stack to include fuel cells that are solid oxide fuel cells because it is well known in the art that both molten carbonate and solid oxide fuel cells are high temperature fuel cells. Therefore, both types of fuel cells would experience similar thermal expansion differences between the fuel cell and the manifold while the fuel cell stack is heated to operating temperature.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tony Chuo whose telephone number is (571) 272-0717. The examiner can normally be reached on M-F, 8:30AM to 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on (571) 272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.


Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR.

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Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

TC



RAYMOND ALEJANDRO
PRIMARY EXAMINER